

ABSTRACT

There is provided an apparatus and method for three-dimensional measurements by shining an object to be
5 measured with plural laser beams while scanning. Even if the optical intensity of laser beams is weak, light disturbance is accurately separated to perform real-time three-dimensional measurement. A laser beam emitted from a laser source is separated into the plural beams of slit light with a
10 predetermined angle at a hologram plate. These two beams are used for scanning and irradiating the object by a scanning mirror. These beams are reflected and read to determine whether or not an interval between these beams corresponds to the predetermined angle.